
Lighting: High Efficacy Lighting In Utility Spaces

Description

This proposed new requirement requires high efficacy lighting in laundry rooms, utility rooms, garages, basements, shops, hobby rooms, etc. The requirement would only apply to permanently mounted luminaires. The following language would be added to §150 of the *Standards*.

§150 (k)

Luminaires installed in the following rooms shall employ high efficacy source(s)

1. *Laundry room*
2. *Utility room*
3. *Garage*
4. *Basement utility areas*
5. *Work room, shop or hobby room*

Benefits

This requirement mandates high efficacy lighting in residential spaces (other than kitchens and baths), where it is appropriate and cost effective. The requirement would result in significant energy savings with ancillary environmental benefits.

Environmental Impact

This requirement will increase the amount of high efficacy lighting in residences, therefore saving energy. While high efficacy sources contain a small amount of mercury, the benefit of mercury reductions at power plants outweigh this impact when emissions and waste are considered at a regional scale.

Type of Change

This requirement would be implemented as a mandatory measure.

Measure Availability and Cost

Equipment similar to what is already required for residential kitchens and baths (see above) would be used in this measure as well. This equipment is commonly available at a reasonable cost from multiple manufacturers.

Useful Life, Persistence and Maintenance

High efficacy lighting lasts longer than the incandescent equipment it would replace. Persistence of savings is provided by a restriction on medium-based sockets (see definition of high efficacy lighting).

Performance Verification

No special requirements for performance verification are needed. Standard plan checking and field inspection activities are necessary, as with all other Standards requirements.

Cost Effectiveness

As part of the follow up research, the annual hours of lighting use needed to justify the switch from incandescent to high efficacy sources will be calculated. These threshold hours will be compared to typical lighting hours in the residential spaces where the requirement applies.

Analysis Tools

Annual energy use figures for cost effectiveness purposes can be determined by multiplying the estimated lighting hours by the estimated power of each lighting system considered. Reduced lighting power also has

cooling benefits in air-conditioned buildings. This benefit will also be quantified and factored into the analysis. CALRES or MICROPAS will be used for this purpose.

Relationship to Other Measures

This measure uses the term “high efficacy lighting” which is generally defined (see above).

Bibliography and Other Research

Research conducted by the Heschong Mahone Group (HMG) for the ALAC has estimates of residential lighting hours in residential buildings. This data is also used in the California Lighting Model, a joint project of HMG and Eley Associates for the CEC. These data will provide estimates of lighting hours in typical residential spaces. The power savings associated with high efficacy lighting will be determined by typical incandescent and high efficacy lighting equipment commonly used in residential applications.